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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

icants : Rina Aharoni et al. Examiner: A. De Cloux 🧖

U.S. Serial No.: 09/768,872 Group Art Unit: 1644

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For : TREATMENT OF AUTOIMMUNE CONDITIONS WITH

COPOLYMER 1 RELATED COPOLYMERS AND PEPTIDES.

1185 Avenue of the Americas New York, New York 10036

June 26, 2002

Assistant Commissioner for Patents Washington, D.C. 20231

SIR:

INFORMATION DISCLOSURE STATEMENT PURSUANT TO 37 C.F.R. §1.97(b)(3)

In accordance with their duty of disclosure under 37 C.F.R. §1.56, applicants direct the Examiner's attention to the following Reference Items 1-159 (Exhibits 1-149) which are listed again on the accompanying Form PTO-1449 (Exhibit A). Applicants request that the Examiner review the references and make them of record in the subject application.

This Information Disclosure Statement is being submitted before the issuance of a first Office Action on the merits in connection with the subject application. Accordingly, no fee is required and this Information Disclosure Statement shall be considered pursuant to 37 C.F.R. §1.97(b)(3).

For the convenience of the Examiner, applicants point out that Reference Item 108 was cited in the October 29, 1999 International Search Report in the corresponding PCT International Application, and a copy of the Report is enclosed as **Exhibit B**.

Applicants also point out that several of the listed references are

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Applicants also point out that several of the listed references are counterparts of each other and are cumulative. Therefore, in accordance with 37 C.F.R. § 1.98(c), a counterpart of a reference is identified after the cite to the reference, but a copy of only one of the counterparts is being provided. Applicants will provide the Examiner with copies of any reference upon request.

- U.S. Patent No. 3,849,550, issued November 19, 1974
 (Teitelbaum, et al.) (Exhibit 1);
- 2. U.S. Patent No. 4,339,431, issued July 13, 1982 (Gaffar)
 (Exhibit 2);
- 3. U.S. Patent No. 5,204,099, issued April 20, 1993 (Barbier, et al.) (Exhibit 3);
- 4. U.S. Patent No. 5,591,629, issued January 7, 1997 (Rodriguez et al.) (Exhibit 4);
- 5. U.S. Patent No. 5,627,206, issued May 6, 1997 (Hupe, et al.)
 (Exhibit 5);
- 6. U.S. Patent No. 5,668,117, issued September 16, 1997 (Shapiro et al.) (Exhibit 6);
- 7. U.S. Patent No. 5,719,296, issued February 17, 1998 (Acton, III, et al.) (Exhibit 7);
- 8. U.S. Patent No. 5,800,808, issued September 1, 1998 (Konfino, et al.) (Exhibit 8);

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- 9. U.S. Patent No. 5,858,964, issued January 12, 1999 (Aharoni, et al.) (Exhibit 9);
- 11. U.S. Patent No. 5,958,972, issued September 28, 1999 (Hupe, et
 al.) (Exhibit 11);
- 12. U.S. Patent No. 6,048,898, issued April 11, 2000 (Konfino, et
 al.) (Exhibit 12);
- 13. U.S. Patent No. 6,054,430, issued April 25, 2000 (Konfino, et
 al.) (Exhibit 13);
- 14. U.S. Patent No. 6,214,791, issued April 10, 2001 (Arnon, et
 al.) (Exhibit 14);
- 15. U.S. Patent No. 6,342,476, issued January 29, 2002 (Konfino, et al.) (Exhibit 15);
- 16. U.S. Patent Publication No. US-2001-0055568-A1, published December 27, 2001 (Gilbert et al.) (Exhibit 16);
- 17. U.S. Serial No. 09/359,099, filed July 22, 1999 (Strominger et al.)(Exhibit 17);
- 18. U.S. Serial No. 09/405,743, filed September 24, 1999 (Gad et al.)(Exhibit 18);

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- 19. U.S. Serial No. 09/816,989, filed March 23, 2001 (Gad et al.).

 Applicants point out that this reference is a counterpart of
 U.S. Serial No. 09/405,743(Exhibit 18);
- 20. U.S. Serial No. 09/875,429, filed June 5, 2001 (Yong and Chabot) (Exhibit 19);
- 21. U.S. Serial No. 09/885,227, filed June 20, 2001 (Rodriguez and Ure) (Exhibit 20);
- 22. PCT International Application No. PCT/US88/02139 (WO 88/10120), published December 29, 1988 (Weiner et al.) (Exhibit 21);
- 23. PCT International Application No. PCT/US95/06551 (WO 95/31990), published November 30, 1995 (Konfino et al.). Applicants point out that this reference is a counterpart of U.S. Patents Nos. 5,800,808 (Exhibit 8) and 6,342,476 (Exhibit 15);
- 24. PCT International Application No. PCT/EP95/02125 (WO/95/33475), published December 14, 1995 (Kott et al.) (Exhibit 22);
- 25. PCT International Application No. PCT/US98/00375 (WO 98/30227), published July 16, 1998 (Arnon et al.). Applicants point out that this reference is a counterpart of US Patent No. 6,214,791 (Exhibit 14);
- 26. PCT International Application No. PCT/US99/16617 (WO 00/05249)

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published February 3, 2000 (Strominger et al). Applicants point out that this reference is a counterpart of U.S. Serial No. 09/359,099 (Exhibit 17);

- 27. PCT International Application No. PCT/US99/16747 (WO 00/05250) published February 3, 2000 (Aharoni et al.). Applicants point out that this reference is a counterpart of the subject application;
- 28. PCT International Application No. PCT/US99/22402 (WO 00/18794) published April 6, 2000 (Gad, et al.). Applicants point out that this reference is a counterpart of U.S. Serial No. 09/405,743 (Exhibit 18) and U.S. Serial No. 09/816,989;
- 29. PCT International Application No. PCT/US99/22836 (WO 00/20010) published April 13, 2000 (Flechter, et al.) (Exhibit 23);
- 30. PCT International Application No. PCT/US99/27107 (WO 00/27417) published May 18, 2000 (Aharoni et al.)(Exhibit 24);
- 31. PCT International Application No. PCT/US01/05198 (WO 01/60392) published August 23, 2001 (Gilbert et al.) Applicants point out that this reference is a counterpart of U.S. Patent Publication No. US-2001-0055568-A1 (Exhibit 16);
- 32. PCT International Application No. PCT/US01/18248 (WO 01/93828) published December 13, 2001 (Yong and Chabot). Applicants point out that this reference is a counterpart of U.S. Serial No. 09/875,429 (Exhibit 19);
- 33. PCT International Application No. PCT/US01/19649 (WO 01/97846) published December 27, 2001 (Rodriguez and Ure). Applicants point out that this reference is a counterpart of U.S. Serial

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No. 09/885,227 (Exhibit 20);

- 34. European Patent Application No. 0 383 620 A2, published August 22, 1990 (Cook) (Exhibit 25);
- 35. European Patent No. 0 359 783 B1, published November 29, 1995 (Werner, et al.);
- 36. Teitelbaum, et al., "Suppression of Experimental Allergic Encephalomyelitis by a Synthetic Polypeptide", <u>Eur. J. Immunol.</u>, 1971, <u>1</u>, 242-248 (Exhibit 26);
- 37. Teitelbaum, et al., "Suppression of Experimental Allergic Encephalomyelitis by a Synthetic Polypeptide", <u>Israel J. Med.</u>
 <u>Sci.</u>, 1971, 7, 630-631 (Abstract) (Exhibit 27);
- 38. Arnon, et al., "Suppression of Experimental Allergic Encephalomyelitis by a Synthetic Copolymer Immunological Cross Reactive with Basic Encephalitogen", <u>Israel J. Med. Sci.</u>, 1972, <u>8</u>, 1759-1760 (Exhibit 28);
- 39. Teitelbaum, et al., "Protection Against Experimental Allergic Encephalomyelitis", Nature, 1972, 240, 564-566 (Exhibit 29);
- 40. Webb, et al., "Further Studies on the Suppression of Experimental Allergic Encephalomyelitis by Synthetic Copolymer", <u>Israel J. Med. Sci.</u>, 1972, <u>8</u>, 656-657 (Exhibit 30);
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- Allergic Encephalomyelitis Suppression by COP-1", <u>Israel J. Med. Sci.</u>, 1974, <u>10</u>(9), 1172-1173 (Exhibit 33);
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- 45. Webb, et al., "Suppression of Experimental Allergic Encephalomyelitis in Rhesus Monkeys by a Synthetic Basic Copolymer", <u>Isr. J. Med. Sci.</u>, 1975, <u>11</u>, 1388 (Abstract) (Exhibit 35);
- 46. Webb, et al., "Molecular Requirements Involved in Suppression of EAE by Synthetic Basic Copolymers of Amino Acids", Immunochem., 1976, 13, 333-337 (Exhibit 36);
- 47. Abramsky, et al., "Effect of a Synthetic Polypeptide (COP-1) on Patients with Multiple Sclerosis and with Acute Disseminated Encephalomyelitis", <u>J. Neurol. Sci.</u>, 1977, <u>31</u>, 433-438 (Exhibit 37);

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- 49. Arnon, et al., "Suppression of EAE in Baboons by a Synthetic Polymer of Amino Acids", Neurol., 1978, 28, 336 (Abstract) (Exhibit 39);
- 50. Sela, et al., "Experimental Allergic Encephalomyelitis" in Menarini Series on Immunopathology, vol. 1, First Symposium of Organ Specific Autoimmunity", Cremona, Italy, June, 1977, (Miescher P.A. ed., Schwabe Co., Basel, 1978), 9-21 (Exhibit 40);
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- 64. Brosnan, et al., "The Response of Normal Human Lymphocytes to Copolymer 1", <u>J. Neuropath. Exp. Neurol.</u>, 1983, <u>42</u>, 356 (Abstract) (Exhibit 54);
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- 66. Bornstein, et al., "Clinical Trials of Copolymer 1 in Multiple Sclerosis", Ann. N.Y. Acad. Sci. (USA), 1984, 366-372 (Exhibit 56);
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- 71. Burns, et al., "Human Cellular Immune Response in Vitro to Copolymer 1 and Myelin Basic Protein (MBP)", Neurol., 1985, 35 (Suppl. 1), 170 (Abstract) (Exhibit 61);
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- 74. Burns, et al., "Human Cellular Immune Response to Copolymer 1 and Myelin Basic Protein", Neurol., 1986, 36, 92-94 (Exhibit 64);
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- 82. Teitelbaum, et al., "Specific Inhibition of the T-cell Response to Myelin Basic Protein by the Synthetic Copolymer Cop 1", Proc. Natl. Acad. Sci. USA, 1988, 85, 9724-9728 (Exhibit 72);
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- 87. Carter, et al., "Newer Drug Therapies for Multiple Sclerosis",

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- 88. Grgacic, et al., "Cell-mediated Immune Response to Copolymer

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- 89. Kay, et al., "The Mechanism of Action of FK 506",

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- 100. Rothbard, et al., "Interactions Between Immunogenic Peptides and MHC Proteins", <u>Ann. Rev. Immunol.</u>, 1991, <u>9</u>, 527-565 (Exhibit 90);
- 101. Salvetti, et al., "Myelin Basic Protein T Cell Epitopes in Patients with Multiple Sclerosis", <u>Department of Neurological Sciences</u>, <u>University of Rome</u>, <u>La Sapienza</u> 1991, 72 (Abstract) (Exhibit 91);
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- 103. Van den Bogaerde, et al., "Induction of Long-Term Survival of Hamster Heart Xenografts in Rats", <u>Transplantation</u>, 1991, <u>52</u>, 15-20 (Exhibit 93);
- 104. Bornstein, et al., "Treatment of Multiple Sclerosis with Copolymer 1" in <u>Treatment of Multiple Scleorsis: Trial Design</u>, Results and Future Perspectives (Rudick R.A. & Goodkin D.E., eds., Springer Verlag, London, 1992) 173-198 (Exhibit 94);
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- 107. Racke, et al., "Copolymer-1-induced Inhibition of Antigen-specific T Cell Activation: Interference with Antigen Presentation", <u>J. Neuroimmunol.</u>, 1992, <u>37</u>, 75-84 (Exhibit 97);
- 108. Teitelbaum, et al., "Synthetic Copolymer 1 Inhibits Human T-cell Lines Specific for Myelin Basic Protein", Proc. Natl. Acad. Sci. (USA), 1992, 89, 137-141 (Exhibit 98);
- 109. Weinshenker, et al., "Natural History and Treatment of Multiple Sclerosis", <u>Current Opinion in Neurol.</u> and <u>Neurosurgery</u>, 1992, <u>5</u>, 203-211 (Exhibit 99);
- 110. Aharoni, et al., "T Suppressor Hybridomas and Interleukin-2-Dependent Lines Induced by Copolymer 1 or by Spinal Cord Homogenate Down-Regulate Experimental Allergic Encephalomyelitis", <u>Eur. J. Immunol.</u>, 1993, <u>23</u>, 17-25 (Exhibit 100);
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If a telephone conference would be of assistance in advancing the prosecution of the subject application, applicants' undersigned attorney invites the Examiner to telephone at the number provided below.

No fee is deemed necessary in connection with the filing of this Information Disclosure Statement. However, if any fee is required, authorization is hereby give to charge the amount of such fee to Deposit Account No. 03-3125.

Respectfully submitted,

certify this hereby that correspondence is being deposited this date with the U.S. Postal Service with sufficient postage as first class mail in an envelope addressed to: Assistant Commissioner for Patents Washington, D.C. 20231

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